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EDITORIAL



THE IMPORTANCE OF WE AND THE W.I.A.

The use of the personal pronoun "I" comes naturally to the selfish egotist, but never engenders the team spirit necessary for the progress of any organisation of the success of any project.

The W.I.A. is fortunate in having a preponderance of members who think in terms of WE. It is this selfless devotion to the cause of Amateur Radio and national need that has been responsible for the progress of the Institute and the high prestige its members enjoy in the community.

Where else could one find a body of people so diverse in political and sectarian outlook or educational

standard so closely wedded to their art, and so deeply concerned with the welfare of their fellowmen as the Amateur Fraternity?

The Remembrance Day Trophy perpetuates the memory of those unselfish Amateurs who gave their lives so that "WE" could continue to enjoy freedom.

Let us always remember the importance of WE—the members of the oldest Amateur body in the world—OUR W.I.A.—and eschew forever the selfish "I" which is characteristic of the Dictator and out of place in OUR democratic world.

FEDERAL EXECUTIVE.

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The G4ZU Three-Band Minibeam

Details of a Compact New Array for 14, 21 and 28 Mc.

BY G. A. BIRD, G4ZU

THE G4ZU Three-Band Minibeam described in this article was designed with the object of providing a high gain directional aerial for 14, 21 and 28 Mc. A single feed line to the transmitter is used and no adjustment is required when changing bands. The performance on each band is equal in every way to that of a comparable single-band array.

In designing the Minibeam particular attention was directed to keeping the weight and physical size as small as possible to permit its use even in a very small back garden. The longest element is 24 ft. and the total weight of the beam in use at G4ZU is only 10 lb. It is therefore possible to use a cheap and simple supporting structure such as a 30 ft. scaffold pole.

The beam consists of three basic elements—a driven element, a director and a reflector. The elements are split at the centre so that on 28 Mc. the array becomes a five element beam. On 21 Mc. it operates as a three element array with an extended driven element giving somewhat greater gain than a conventional three element beam, and on 14 Mc. as a two element array with shortened elements, thus achieving a worthwhile reduction in size and weight.

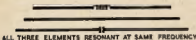


Fig. 1.—Three methods of resonating beam elements to the same frequency.

The aerial is normally fed with 300 to 450 ohm balanced line, but a matching unit has been designed for converting to 75 ohm co-axial feed where this is preferred. The three-band matching unit is automatic in operation and does not require re-tuning when changing from band to band as would be necessary when using a normal type of aerial tuning unit. In practical operation the station transmitter or receiver can be switched to any of the three bands covered by the system with the assurance that a high gain directional aerial with a good front-to-back ratio will be instantly available. The advantages this offers for contest work cannot be over-estimated. Provision has been made in the matching unit for operating the aerial and feeder as a top loaded vertical on 3.5 Mc. when operation is required on this band.

DESIGN OF THE ELEMENTS

The method employed for obtaining three-band resonance is rather unusual and merits some detailed description. It is fundamentally a system of inductive loading with electronic switching by means of quarter-wave stubs. To illustrate the principles involved it is necessary to consider first of all the

The design of the aerial system described here has been protected by a British Patent Application (No. 33589/55) but this does not prevent individual Amateurs employing the system for their personal use. Sole rights to manufacture and sell aerials of this pattern have been granted to the Panda Radio Co. Ltd., to whom thanks are recorded for permission to publish this article.

design of the director. There are two ways of altering the resonant frequency of a parasitic element. One is to change its physical length, the other, less commonly employed but equally effective, is to insert inductance or capacity at the centre of the element (Fig. 1). Inductance will lower the resonant frequency. Capacity will make the resonant frequency higher.

In this particular application the director (Fig. 2) is 16 ft. long and is loaded with inductance at the centre to permit operation as a director on the 21 Mc. band. If this inductance were shorted out by some form of switch or relay we should be left with a plain element 16 ft. long, correct for operation on 28 Mc.

To obviate the need for mechanical switching advantage is taken of the rather unusual properties of a quarter-wave stub. If a piece of twin feeder is cut to be a quarter-wave resonant length at 29 Mc. and one end is left open, the other end will appear like an electrical short circuit at this frequency. At 21 Mc., however, it will no longer behave like a short circuit but will behave electrically like a small capacity. If this stub is connected across the 21 Mc. loading coil it will perform the switching function automatically. On 28 Mc. the loading inductor will be shorted out by the stub. On 21 Mc. the stub will merely appear like a small capacity across the loading coil. The condition for automatic two-band resonance has thus been satisfied as far as the director is concerned.

A somewhat similar approach is used for the reflector, the physical length of which is 23 ft. (Fig. 3). It is loaded with inductance for operation on 14 Mc., a quarter-wave stub automatically shorting out the inductor for 21 Mc. operation. The reflector also performs a useful function on 28 Mc. On this band



Fig. 2.—A two-band director for 21 and 28 Mc.

its behaviour is similar to that of two half-wave reflectors in phase. Due to the relatively wide spacing the tuning is quite broad and no critical adjustments are necessary. The reflector is spaced 7 ft. from the driven element and 12 ft. from the director.

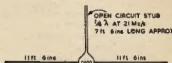


Fig. 3.—Three-band reflector for 14, 21 and 28 Mc.

Coming now to the driven element, it would have been quite possible to employ stubs and inductors in a similar manner to the parasitic elements, but it was felt that this would unnecessarily complicate the system. As will be seen later, the design finally decided upon provides several incidental advantages. It should perhaps be explained at this stage that although half-wave driven elements are normally employed in parasitic arrays, this is by no means essential and in certain cases there may be definite advantages from the point of view of gain and radiation resistance in using a length other than a half-wave. The length finally decided upon, 24 ft., was selected with three objects in view—

- (1) To permit operation as a five element beam on 28 Mc. the driven element being effectively two half-waves in phase on this band.
- (2) To improve the band width and radiation resistance on 21 Mc.
- (3) To minimise reactance changes when switching from band to band.

The residual reactance changes are usefully employed in resonating the automatic matching unit described later.

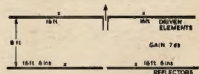


Fig. 4.—Four element beam for 28 Mc.

The design of the aerial as far as 28 Mc. is concerned was influenced to some extent by an article in the April, 1955, issue of "QST." In this article, W8AJF showed that a four element beam—Fig. 4—could be replaced by a three element array using a shortened driven element and a single director (Fig. 5). He claimed that this arrangement gave a higher front-to-back ratio and resulted in no loss of gain, although the saving in size and weight was considerable (forward gain 7 db.).

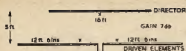


Fig. 5.—Three element array using a shortened driven element and a single director.

In the Minibeam an arrangement of this nature has been backed up by a reflector giving a further 2½ db. gain (Fig. 6). The beam on 28 Mc. is effectively a five element array and gives more gain and greater bandwidth than could be obtained with five elements in line. The bandwidth is probably sufficient to cover the American 27 Mc. band so that in the United States the array could be correctly described as a four-band beam.

FEEDING THE MINIBEAM

The matching unit is located at the lower end of the feeder. This means that all matching adjustments can be made at ground level with the beam in its final working position. This overcomes the difficulty commonly experienced with parasitic beams of a change in feed impedance as the aerial is raised to its final working height with a consequent increase in standing wave ratio. This can often entail serious loss with co-axial type feeder.

The feeder recommended for use with the Minibeam is 300 to 450 ohm open wire line. This value was selected because it gives the lowest average standing wave ratio over the three bands covered. Losses due to standing waves are extremely small with this type of feeder. It is not always appreciated how much power is lost with the normal type of co-axial cable. With low impedance feeder and a T- or Gamma-match, it is often found, due to changes of reactance, that the standing wave ratio may rise to 3.5:1 or more at the band edges even when the s.w.r. at the band centre has been reduced to a satisfactory figure. The writer is convinced that in many Amateur aerials much of the power is lost before it ever reaches the radiator. With open wire feeder, however, reactive components can be largely ignored and may even be put to some useful purpose. This is what led to the idea of a matching unit which could resonate automatically on each band.

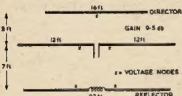


Fig. 6.—The Minibeam for 14, 21 and 28 Mc.

The impedance, as seen at the bottom of the feeder on 21 Mc. is arranged to be largely resistive. A series tuned circuit approximately resonant at 21 Mc. is connected across the end of the feeder. If the driven element and feeder length are suitably chosen an inductive component will appear at the lower end of the feeder on 14 Mc. Providing the L/C ratio is correctly chosen this inductive component appearing in series with the tuned circuit will automati-

cally de-tune it to a lower frequency, i.e., 14 Mc.

On 28 Mc. an opposite effect occurs. On this band a capacitive reactance appears at the bottom of the feeder automatically shifting the tuned circuit to a higher frequency, i.e. 28 Mc. It will be apparent that if the series tuned circuit is coupled to the transmitter with a co-axial link, it is possible to have an aerial tuning unit which will resonate automatically on three bands without adjustment. To make up any random variations that may occur in practice a trimmer condenser can be provided on the tuning unit, but with the model constructed by the writer, this condenser, once set, requires no further adjustment when changing from band to band.

With a two-turn coupling link correct transmitter loading was obtained on 21 and 28 Mc., but on 14 Mc. coupling was found to be slightly less than optimum. To correct this, the reactance of the link at 14 Mc. was tuned out by a series condenser of approximately 120 pF. This provided tighter coupling on this band without affecting the other two bands to any marked extent.

The automatic matching unit (Fig. 7) is not, of course, an essential part of the beam. The 450 ohm balanced line can, if desired, be connected directly to any aerial tuning unit of normal pattern. With an ordinary parallel tuned circuit it is probable that all three bands could be covered with a single coil providing the tuning condenser has a sufficiently large maximum capacity.

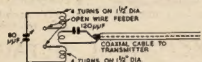


Fig. 7.—The Minibeam automatic aerial matching unit.

For correct operation with the automatic matching unit the feeder should be cut to a length of between 38 and 40 ft. If a normal type of aerial tuning unit is used, the system can be operated with almost any length of feeder, but in order to maintain a resistive termination on all three bands, a feeder about 56 ft. long is recommended.

If the two feeder legs are strapped together the aerial will operate quite efficiently as a top loaded vertical on 3.5 Mc. A switch is provided on the Minibeam matching unit for selecting this condition when 3.5 Mc. operation is desired.

The circulating currents in the matching unit are relatively low, with the result that power loss is negligible, and quite small coils can be used without fear of over heating. The circuit tunes most sharply on 14 Mc., and once it has been resonated on this band by means of the trimmer condenser the bandwidth on 21 and 28 Mc. will generally be found adequate to accommodate these two bands without further adjustment.

COMPARISON WITH FULL-SIZED ARRAYS

On 21 Mc. the array is a normal three element Yagi except that the radiation resistance and gain are somewhat higher

than normal due to the extended driven element. On 14 Mc. the gain is about 1 db. less than a full-sized beam due to the use of shortened elements. It was decided not to make the director resonant on this band as it would have resulted in too great a loss of bandwidth and radiation resistance. It does, however, help to improve the front-to-back ratio and lower the angle of radiation by a small amount. A number of checks against full-sized three element beams on 14 Mc. have resulted in surprisingly favourable comparisons on the score of signal strength.

The writer would like to express his appreciation of the help given by Mr. A. Woolvern (G8HLS) and many other Amateurs in checking the performance of the system on 14 Mc. Matched against the three element wide-spaced beam at G8HLS, which weighs about 700 lb., it was found that the Minibeam could put a signal into Australia, New Zealand and the United States which was in most cases of identical strength and rarely more than one "S" point down.

On 21 Mc. numerous checks were conducted with the help of G2CDI, G5SD, G3GKF, G2CCD and G3HCU, to mention only a few of the many willing helpers. The array seems to be capable of holding its own with all comers on this band and the same applies to 28 Mc. During poor conditions on the later band the signal from the Minibeam is often reported as the only one getting through the noise in Australia and New Zealand. With 28 Mc. wide open, the large number of replies to a CQ call can sometimes become rather embarrassing.

On the score of front-to-back ratio, measurements made on site were checked against on-the-air reports. G2MI at a distance of about five miles provided the following reports:—

Band	Front of Beam	Back of Beam
14 Mc.	S9 + 60 db.	S3
21 Mc.	S9 + 60 db.	S8
28 Mc.	S9	S3+

† Listening on 21 Mc. aerial.

Checking simultaneously with G2CDI, 60 miles to the west, and G5SD, 10 miles to the east, provided these results:—

Band	Station	Front of Beam	Back of Beam
21 Mc.	G2CDI	S9 + 40 db.	S4
	G5SD	S9 + 10 db.	S3
28 Mc.	G2CDI	S9 + 20 db.	S3
	G5SD	S9 + 10 db.	S4

The front-to-back ratios obtained in this way are noticeably greater than measurements made on side, but serve to indicate that the discrimination is more than adequate for all normal purposes.

The principle of stub switching can, of course, be applied to other types of array and the writer is experimenting at the moment with a compact two-band beam, a two-band ground plane, and a three-band beam where loading coils can be eliminated. It is felt, however, that the arrangement described herein is likely to be generally most attractive, and it is hoped that many Amateurs who have so far been deterred from erecting a beam, due to lack of space, may be encouraged to try the system. Its use should enable them to compete successfully on the crowded DX bands of today.

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Rochelle salt crystal microphones are perhaps the most widely used for all types of service where quality speech and music reproduction at high output levels is a requirement. They are dependable in performance and when fitted with the appropriate "Zephyrfil" filter, their frequency response may be adjusted to suit any application or requirement.

This crystal microphone requires to be terminated with a high value parallel load of the order of 1 to 5 megohms for best results.

The mass of the moving parts is small, hence the sensitivity is high and a high efficiency is achieved.

Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars, being fixed thereto with a good quality cement, thus ensuring stability and long life.

Case 1½" diameter (rear), ¾" thickness, 1-13/16" overall diameter (front) with filter fitted.

Frequency Response = 60-6,500 c.p.s.
Output Level = -45 db (0 db = 1 volt/dyne/cm²)
Impedance = Model 1XA Grid 1 — 5 megohms.



Approximate Frequency Response Curve

AVAILABLE FROM ALL LEADING TRADE HOUSES

ZEPHYR PRODUCTS PTY. LTD.

58 HIGH STREET, GLEN IRIS, S.E.6, VIC.
Phone: BL 1300

PULSE THEORY

PART ONE

BY I. F. BERWICK,* VK3ALZ

A PULSE is any non-sinusoidal waveform. It can be shown that if an infinite series of sine waves is added, the resultant of this superimposition is a square pulse. See Fig. 1a. If only the higher harmonics are present the resultant is a peaked wave. (Fig. 1b). If only the lower harmonics are present, the resultant is more curvilinear and is said to be sinusoidal (Fig. 1c).

DEFINITIONS

Pulse Repetition Frequency (P.R.F.) is the number of pulses per second.

Pulse Duration (P.D.) is the time interval between the commencement of pulse rise and the end of pulse decay.

Pulse Recurrence Interval (P.R.I.) is the time interval between commencement of rise of the preceding pulse and commencement of rise of the following pulse. (See Fig. 1d).

These last two quantities are measured in micro-seconds.

Relationships:

$$P.R.I. = \frac{1}{P.R.F.}$$

$$\text{therefore } P.R.F. = \frac{1}{P.R.I.}$$

Power Measurement for Pulse Peak Power = $E I$, where E is the average voltage during the pulse, and I is the average current during the pulse (see Fig. 1e).

Average Power. Peak power averaged over the pulse recurrence interval (Fig. 1f).

$$\frac{\text{Average Power}}{\text{Peak Power}} = \frac{\text{Pulse Duration}}{\text{Pulse R.I.}}$$

$$\text{Duty Cycle} = \frac{\text{Average Power}}{\text{Peak Power}} \quad \text{by definition,}$$

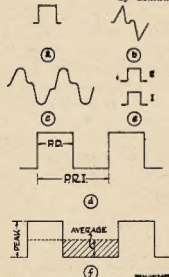


Fig. 1.

*Lot 35, Loongana Avenue, Glenroy.

During the last war pulse application received considerable impetus, mainly due to radar and allied techniques. Now that we have been granted experimental television licences, knowledge of pulse theory and its applications will be of use to the Amateur.

In addition, high fidelity amplifier enthusiasts know that square wave testing of audio amplifiers is considered a very accurate check on performance and this should interest them, too.

hence

$$\begin{aligned} \text{Duty Cycle} &= \frac{P.D.}{P.R.I.} \\ &= P.D. \times P.R.F. \end{aligned}$$

EFFECT OF AN R/C NETWORK ON THE SQUARE PULSE

It is well known that if a sine wave is passed through an R/C or an L/R network, the pattern remains unchanged—if we put a sine wave in, we get a sine wave out.

The condenser, or inductor, whichever it may be, follows the a.c. swing of the voltage, due to the regular rate of change of the voltage, and the comparatively long time interval for each cycle of the oscillation.

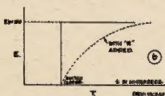
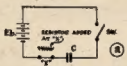


Fig. 2.

However, if a square pulse is applied to such a network the output is not usually a square pulse. The reason is that the rate of change of voltage at the beginning and end of the square pulse is very great (theoretically, it is infinite) and the C/R or L/R network having a finite time constant cannot follow the voltage rise and fall.

Refer first to Fig. 2a. This circuit shows a battery in series with a condenser and a switch. Let E_b = battery voltage = 100 volts. If we close the switch, the condenser charges instantaneously to 100v.; the potential-time graph (Fig. 2b) illustrates this fact.

Refer now to Fig. 2a. A resistor is now added to the circuit. When the switch is closed, the current is limited

initially by the value of the resistance in circuit. Thus condenser charging is not instantaneous.

The graph (Fig. 2b) of E against T is therefore an exponential curve or is said to have first order curvature. This exponential curve has the property that no matter how great we make T , E will always be able to rise to a slightly higher value if a further time interval is taken. That is, the condenser never fully charges to E_b (= 100 volts) no matter how long we wait.

In practice therefore the condenser is said to be fully charged after time $T = 5 CR$ microseconds.

In Fig. 3a we have in circuit a fully charged condenser and a switch which initially is open. On closing the switch the condenser discharges instantaneously. Fig. 3b shows the graph of E against T , the dotted line shows the same circuit with the addition of resistance R .

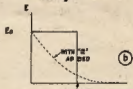
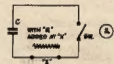


Fig. 3.

On closing the switch the rate of condenser discharge is again an exponential curve, but of negative gradient (or slope) and from this we see that E never falls to zero no matter how long we wait, i.e. the condenser is never completely discharged. However, in practice again we say that the condenser is discharged after time = $5 CR$ microseconds.

We are now able to see what will happen when a square pulse is applied to a C/R network. Fig. 4a shows a circuit of large C/R, i.e. of long time constant, to which a square pulse is applied.

Figs. 4b, 4c, and 4d show the graphs of E_b (applied voltage), E_c (condenser voltage), E_r (resistor voltage) against time.

Consider E_c first. Initially E_c is zero—as the pulse begins the condenser starts to charge, therefore E_c rises exponentially. Due to the long time constant, E_c only rises to a small percentage of E_b before the pulse ends. We take a figure of 10v.

When the pulse ends, C discharges exponentially through R , again with a long time constant. Hence the curve for E_c comprises two separate exponential curves—one with positive gradient leading and one with negative gradient following.

(Continued on Page 7)



Danger in the Deep . . .

"Send SOS; it's the new call and it may be your last chance to send it!"

The suggestion was made in the wireless room of a ship everyone believed was unsinkable.

A radio officer looked up and laughed.

The time was 12.45 a.m., the date, April 15, 1912, and the sinking "Titanic" sent out the first SOS in history.

Today, a danger as disastrous to shipping as an iceberg is — *rust*.

Rust is costing Australia more than £3 every second of the day.

Oil coatings* have now been devised which protect metals from corrosion. Manufactured by SHELL, they vary from thin, oily films suitable for short periods, to thicker, grease-like films for longer protection.

With such coatings Shell is helping Australia to remove the £100 million rust-stain from the balance sheet of the nation.

**Shell Envis Oils.*



BY A. K. HEAD,* VK3AKZ

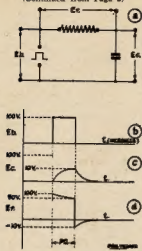


Fig. 4.

Next consider E_r . Initially E_r is zero—but as soon as the pulse arrives E_r immediately rises to E_b as the condenser has not had time to charge at all. As E_c rises due to charging up of C , E_r falls in an exponential manner until the pulse ends. At this stage $E_r = E_b - E_c = 100 - 10 = 90$ volts. However, as soon as E_b falls to zero, E_r also drops by 100 volts and is now -10 v. Thus E_r starts to rise exponentially towards zero volts as E_c falls exponentially to zero volts.

It should be borne in mind at this stage that the foregoing deals with a C/R network of long time constant, and the voltage patterns obtained apply only to this type of network.

NETWORK WITH SMALL C/R

In Fig. 5c and 5d we see the graph of E_c and E_r respectively. Let us consider E_c first. As the pulse starts C charges exponentially towards E_b , however as C/R is small, this occurs quite quickly and for the rest of the pulse duration $E_c = E_b$. Now the pulse ends and E_c discharges exponentially to

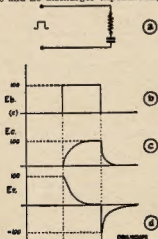


Fig. 5.

THIS is the oft told tale of how a new r.f. tube can rejuvenate an old receiver. The receiver in question is a Marconi CR-100, a classical communications receiver covering 60 Kc. to 30 Mc. in six bands, two r.f. stages, 455 Kc. i.f., crystal filter, variable selectivity and so on. A pleasant receiver to use, but the noise generated by those 6K7 r.f. tubes on 21 and 28 Mc. was overpowering. When 10 metres was open it was possible to hear exactly three stations, all locals who would be S9 on a crystal set.

Of course the remedy was obvious, a change to low noise r.f. tubes. This meant miniature sockets, which meant taking hammer and chisel to the octal sockets. But on a number of occasions, when about to strike the first blow, the upraised hand was frozen at the thought of the new high gain tube bursting into oscillation, which would probably only be controlled by a complete re-wiring of the r.f. end.

This was sufficient excuse to defer any action for many moons. Finally, I came back to the old idea of having a trial run by using an adaptor consisting of a miniature socket mounted on an octal base. I had been rather cold on this idea at the thought of leads criss-crossing inside the adaptor in order to get the right connections. However, when I got round to examining the connections, it was a pleasant surprise. Apparently the person who decided on what pins should be what in the miniature tubes, was also thinking about adaptors. Take a look at the following table where the octal list is for 6K7, 6J7, 6U7 etc., and the miniature for 6BA6, 6AU6, 6AK5, 6AG5, etc. (but beware the Z7T).

If the octal socket has heater pin 2 active and pin 7 earth, then the table

*3 Annadale Street, Kew, Vic.

zero, quite quickly due to small C/R, the E_c curve is more regular in shape than is the case for a large C/R.

Now consider E_r . As the pulse starts E_r rises instantly to E_b and then falls exponentially quite quickly to zero as soon as the condenser charges up; for the rest of the pulse duration E_r is zero. When the pulse ends the E_r falls by 100v. ($= E_b$) and is now -100 v. Once again therefore E_r charges up with a short time constant to zero volts.

As can be seen from the graph (Fig. 5d) E_r is a peaked wave and bears no resemblance whatever to the square pulse, this means that circuits with short time constants play havoc with square pulses and in practical circuits for pulse amplifiers must be avoided if a reasonable pulse shape is to be retained.

The pulse developed across a condenser is known as an integrated wave, while the pulse developed across a resistor is known as a differentiated wave. If the integrated and differentiated waves are added graphically, the resultant obtained is the input pulse (adding Figs. 5c and 5d would give us Fig. 5b).

Octal	Miniature
1 Shield	3 Heater
2 Heater	4 Heater
3 Plate	5 Plate
4 Screen	6 Screen
5 Suppressor	7 Suppressor or Cathode
6 Blank	Blank
7 Heater	1 Grid
8 Cathode	2 Cathode or Suppressor

shows that all connections in the adaptor are direct. The connection to the grid of the miniature socket depends on whether the grid lead is wanted above or below the chassis. If below, then pin 6 of the octal socket is available. In my case, it was more convenient above, so a grid cap was soldered to a stiff wire which poked up from the adaptor.

The only traps in making an adaptor appear to be to forget to earth the central sprig and shield of the miniature socket or to break up a tube to get an octal base and then find it hasn't got all the pins needed (in particular, pin 6 is often missing).

The next question was what tube to use? Good reading on this is the article by W05FY in May '53 "A.R." its sequel in June '55 "QST" and the correspondence in the same "QST". Of the tubes on hand a 6AG5 seemed the most suitable so it was tried as the first r.f. tube. With a certain amount of morbid satisfaction it was found to take off when the receiver was tuned to 21 Mc. In fact it was almost a disappointment to find that all that was needed was better screen and cathode by-passes. The original ones were 0.1 uF, paper condensers about 2 inches away from the socket, and when 0.001 uF, micas were added right at the socket it became perfectly stable. And it was now a different receiver. The bands suddenly became populated, the antenna trimmer could be peaked on noise and there was an increase in noise when the antenna was connected.

Next was the question whether a.v.c. and/or manual gain control should be applied to the 6AG5. It was decided to use neither, but let it run flat out at all times, for being a sharp cut off tube it does not take kindly to any form of gain control. The second r.f. tube has been left as a 6K7 as there is no advantage in using another low noise tube here and its good a.v.c. action is needed to protect the mixer on strong signals. Very strong signals can be handled by detuning the antenna trimmer and no snags in running the 6AG5 flat out have yet come to light.

Since everything appears to be satisfactory, I suppose I should take hammer and chisel and install the 6AG5 permanently. What did I say, everything working satisfactorily? Then why not just let it be? Ho-hum!

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NEW, in original cartons.
Special prices for quantities
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1S5 ... 7/6	7193 ... 2/11
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8SS7 ... 7/11	813 ... 40/-
6U7G ... 7/11	815 ... 40/-
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EF50 Sockets	3/6
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Wireless Sets 38 Mk. II.

Ideal person-to-person communication set. Working range approx. 2 miles set to set on a vertical rod aerial, or 10 miles approx. working from a good receiver and high-powered transmitter. It contains 5 valves: 1—ATP4, 4—ARP12. Operates from 3v. and 120v. batteries. Complete with microphone, headset and 4 ft. aerial section.

Price (less batteries)—
£9/10/- each.

Packing and delivery to railhead, 7/6 extra.

TANK WHIP AERIALS

English Slotted Type.
Two section (8 ft.).
15/- per set.

METERS, all types
from 2/6 each

FREQUENCY & FIELD STRENGTH METERS

155-235 Mc. Price £15.

TEST OSCILLATOR

150-226 Mc. Price £10.

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CO-AX CABLES AND AERIALS

Can be adapted for Television. Length approx. 9 yards.

Price: 29/6. Packing and postage 5/-, Interstate 7/6.

Co-ax Cable, 72 ohms, 2/6 per yard.

Co-ax Connectors and Plugs, all types, from 2/6 a pair.

ALUMINIUM CHASSIS

Ex-American I.F.F.

Price: 5/-
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We can now offer Genemotors to operate from both 6 volt and 12 volt batteries, with an output of 250 volts, 90 Ma. Incorporated in these Genemotors is a Blower, which can be used also for Air Conditioning.

Price: 6 Volt, £5; 12 Volt, £3/10/-.

Packing and delivery to railhead, 5/- extra.

BERNARD'S BOOKS

Serial numbers and prices:

56, Radio Aerial Handbook. 57, Ultra Shortwave Handbook. 64, Sound Equipment Manual. 69, Radio Inductance Manual. 72, Radio Experimental Circuits. 83, Radio Instruments and their Construction—all 3/9 each.

85, Miniature Radio Equipment and its Construction, 5/3. 99, One-Valve Receivers, 2/3. Two-Valve Receivers, 2/3. Practical Coil Construction, 4/6.

NOTE THESE AT GIVE-AWAY PRICES

Among other useful articles for a variety of purposes:

Micro Switches, 5/6 and 6/6.	Ring Magnets 1/6.
Meters, all types, from 2/6.	Transformers, at various prices.
Selsyn Motors from ... 5/-.	

Here's a fine opportunity!

We offer **International Radio Tube Encyclopaedia**. This is a very important contribution to literature on Electronic Engineering. It contains some unique features: 15,000 tubes of all types used by the Armed Services of the Commonwealth, U.S.A. and Europe are completely described, in addition to the CV and normal civilian patterns.

Full instructions and extensive data in **fifteen languages**: English, French, Italian, Spanish, Dutch, Portuguese, German, Swedish, Norwegian, Danish, Russian, Polish, Czech, Hebrew, and Turkish.

Price: Only £3/3/-.

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BLOCK CONDENSERS

1—1 uF. 600 v. working, 2/6
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JONES PLUGS AND SOCKETS

21-pin with cover.

Price: 12/6.

SWITCHING MOTORS

12 volt and 24 volt.

Price: £5/10/-.

Packing and postage 7/6,
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Valve Socket and Shield

Price: 2/6

RELAYS

Among our Relays the following should have special appeal:

3000 Type, 40,000 ohms	35/-
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600 Type, 400 ohms	15/-
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60 ohms, with 4 makes	10/6
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VK-ZL DX CONTEST, 1956

NZART and W.I.A., the National Amateur organisations in New Zealand and Australia, invite world-wide participation in this year's VK-ZL DX Contest.

Objects For the world to contact VK and ZL stations and vice versa.

When? Phone: 24 hours from 1000 G.M.T. Saturday, 6th October, to 1000 G.M.T. Sunday, 7th October.

C.W.: 24 hours from 1000 G.M.T. Saturday, 13th October, to 1000 G.M.T. Sunday, 14th October.

Duration for all contestants is 24 hours.

RULES

1. There shall be three main sections to the Contest—

- (a) Transmitting C.W.
- (b) Transmitting Phone.
- (c) Receiving—Phone and C.W.

2. The Contest is open to all licensed Amateur transmitting stations in any part of the world. No prior entry need be made. Mobile Marine or other non-land based stations are not permitted to enter the Contest.

3. All Amateur frequency bands may be used, but no cross band operating is permitted.

4. C.W. will be used for the second week-end and phone for the first week-end. Stations entering for both phone and c.w. sections must submit entirely separate logs for each.

5. Only one contact per band is permitted with any one station for Contest purposes.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each must be considered a competitor, and must submit a separate log under his own call sign.

7. **Cyphers:** Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telemetry) or RST (c.w.) reports plus three figures which may begin with any number between 001 and 100 for the first contact, and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 053, then for the second contact the number must be 054, for the third 055, and so on. If any contestant reaches 999, he will start again with 001.

8. **Scoring:** For VK and ZL Stations **ONLY**—15 points will be scored for the first contact on a specific band with any overseas country, 14 points will be scored for the second contact on the same band with the same country, 13 points for the third, and so on to the fifteenth contact which will score 1 point. All contacts with that particular country on that band will thereafter count 1 point each. This scoring procedure will be repeated on each band to encourage multiband operation. There will be no VK-ZL contacts between each other. Official A.R.R.L. countries list will be used.

Note.—Points will not be entered in the log for each contact; totals for each

country will be shown in the summary. Each call area in the U.S.A. will be a "Country" for scoring purposes.

For OVERSEAS STATIONS only. One point will be scored for each contact on a specific band with any VK-ZL district. The final score will be derived by multiplying the total contacts on all bands by the total number of VK-ZL districts worked on all bands. VK-ZL districts are ZL1, 2, 3, 4; VK1, 2, 3, 4, 5, 6, 7, 8.

9. Logs—

(a) Logs must show in this order: Date, time in G.M.T., band of operation, call of station worked, serial number sent, serial number received.

(b) A separate log must be submitted for each band. For each band an analysis sheet must be given showing: List of countries worked with numbers of contacts for each country and points claimed for each country worked for that band.

(c) A summary sheet to show—

1. Station call sign.
2. Name and address of the operator.
3. Phone or c.w.
4. List of points claimed for each band.
5. Grand total of points.
6. Brief description of gear used, power, etc., etc.

(d) A declaration that all Contest rules and regulations for Amateur Radio in your country have been observed, and that the log is correct and true to the best of your belief.

10. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

11. The ruling of the Executive Council NZART. will be final. No dispute will be entered into.

12. Awards—

(a) NZART. will award certificates to the top scorer on each band, and the top scorer in each VK and ZL district. Other awards will be announced independently by W.I.A. and NZART. Additional certificates will be awarded depending on the number of logs received.

(b) **Overseas Stations:** Certificates to the highest scorer in each country (each call area in the U.S.A.). Additional certificates will be awarded depending on the number of logs received, e.g. certificates may be awarded to the high scorers on different bands and to place winners other than first or second.

13. **Entries from VK and ZL stations** should be posted to NZART. Contest Manager, 86 Lytton Road, Gisborne, N.Z., to arrive not later than 31st December, 1956, while overseas logs should reach NZART., Box 489, Wellington, by 24th January, 1957.

RECEIVING SECTION

1. The rules of the receiving section are the same as for the transmitting section, but it is open to all members of any Short Wave Listeners' Society in the world. No transmitting station is permitted to enter this section.

2. The Contest times and logging of stations on each band per week-end are as for the transmitting section. Logs will take the same form as for the transmitting section.

3. To count for points, the call sign of the station being called, the strength and tone of the calling station, together with the serial numbers sent by the calling station must be entered in the log. Scoring will be on the same basis as for transmitting stations.

4. It is not sufficient to log a CQ.

5. VK receiving stations may log overseas and ZL stations, while ZL receiving stations may log overseas and VK stations.

6. Certificates will be awarded to the highest scorers in each country on the same basis as for transmitting stations.

— . . . —

R.S.G.B. Telephony Contest

The first-ever R.S.G.B. Contest exclusively for telephony operation and open to stations throughout the world is to be held on November 24-25, 1956. Its aim is to encourage stations to operate on the 21 and 28 Mc. bands during the years of high sunspot activity. Contacts between any station in the British Isles with any station in the rest of the world (including Europe) will count for points—the first time, incidentally, that any R.S.G.B. Contest on these lines has been arranged.

Full details and rules will appear in a later issue of this journal.

— . . . —

TELEVISION STATION OPERATOR'S CERTIFICATE

The Australian Broadcasting Control Board has notified the following candidates that they were successful at the examination held on 12th June, 1956, for the Television Operator's Certificate of Proficiency—

Melbourne: Ian George Holmes, John Isaac Young; **Sydney:** Frederick John Appleton, Arthur John Brown, John Terry Christopher, Alan Laurence Ellis, Kevin Arthur Long, Stanley Wainwright Owen, Perth: David Cough.

The examination was conducted by a Board of Examiners comprising officers of the Australian Broadcasting Control Board; Mr. R. H. Mondell, of the Department of Technical Education, Sydney; and Mr. F. A. Kempson, of the Royal Melbourne Technical College.

Examinations are conducted twice yearly, on the second Tuesday of June and December. Applicants who have passed any section of the examination on a previous occasion will be exempted from those sections for a period of 12 months; that is, two half-yearly examinations succeeding the passing of the sections.

The next examination will be held in Sydney and Melbourne on 11th December, 1956. Applications for the December examination must be lodged with the Secretary of the Board, 497 Collins Street, Melbourne, by the 15th November, 1956.

TELEVISION RECEIVERS

In order that members will have a clear understanding of the circumstances surrounding the consternation in regard to Television Receivers, Federal Executive briefly relates action taken in this matter.

On being advised that certain Television Receivers were employing Intermediate Frequencies in the 21 Mc. band, a letter was directed to the manufacturer requesting his observations on the matter. At the same time, an air-mail letter was despatched to the A.R.R.L. Headquarters posing a number of questions as to what happened in U.S.A. in regard to this particular frequency.

In Federal Parliament, questions concerning Television Intermediate Frequency were being asked and the Postmaster-General promised consideration.

As it was now most important to have all information available, Federal Executive requested Divisions to supply urgently the I.F. of Television Receivers being manufactured in their State and the rapidity with which answers came to hand was most gratifying.

The next necessity was to clarify the position of Amateurs operating on 21 Mc. should they cause interference. With this in mind, Executive wrote to the Amateur Administration requesting a Departmental ruling. It was pointed out that certain sets which did not follow the recommendations of the Australian Broadcasting Control Board used 21-27 Mc. band Intermediate Frequencies and should interference be caused it need not be due to negligence on the part of Amateur operators.

To glean yet further information to place before the authorities, on the 7th July, Executive wrote to Mr. Phillip Rand, well known in America for his work on Television Interference. Again a series of questions were asked.

Due to the activities of Amateurs discussing the problem, some public concern was evinced and this prompted a Melbourne weekly with circulation in Sydney to make inquiries. In the course of so doing, this newspaper contacted Federal Executive. It was now felt that a public statement of an official nature indicating the viewpoint of the Wireless Institute was necessary. This was devised and released to newspapers in Melbourne.

Now coming to hand were the replies to overseas letters. These indicated, to quote A.R.R.L.:—

(a) "Nearly all the TV receivers produced in U.S. today have an Intermediate Frequency in the 41 Mc. region in accordance with recommendations of the F.C.C."

(b) Referring to the 21 Mc. band and interference—

"The old 21 Mc. Intermediate Frequency was chosen by manufacturing engineers some years before Amateurs obtained a 15 metre band. Even then, however, there was interference to TV reception from shortwave broadcast stations thousands of miles away operating in the 21.7 Mc. region." Referring to tests carried out by the A.R.R.L., "These tests proved conclusively that an Amateur Station near a TV Receiver

with 21 Mc. Intermediate Frequency created real problems of interference."

Mr. Rand's letter supplemented this. In regard to 21 Mc. interference he stated.

"This TVI extended out to a radius of about three miles from an Amateur Station using 500 watts."

He also shed light on the 27 Mc. Video Frequency saying, "TV Receivers having a Video I.F. in the range 27 Mc. receive severe interference from medical diathermy and industrial heating units in addition to Amateurs in the 11 metre band."

He added, "Interference on 21 Mc. comes not only from Amateurs, but also from high power s.w. broadcast stations in Europe in the 21 Mc. range."

Mr. Rand also pointed out the effect of the h.f. oscillator of 21-27 Mc. sets caused TVI to neighbouring sets as far as the U.S. TV channels were concerned.

Relevant sections of the A.R.R.L. letter were brought to the notice of the authorities and the point of Amateur interference was again pressed.

On Thursday, 19th July, the Postmaster-General, Mr. Davidson, made an important announcement to the public concerning the Intermediate Frequencies recommended by the Australian Broadcasting Control Board and indicated that interference could result if these were not used. This, however, did not clarify the position of Amateur operators.

The Postmaster-General said that with the commencement recently of experimental transmissions by Commercial Television Stations in Sydney and Melbourne he anticipated that an impetus would be given to the purchase of Television Receivers. Accordingly intending purchasers should realise that they were securing a relatively costly and complex unit of equipment and they should

therefore take every possible precaution to ensure that their installations would provide an efficient and trouble-free service.

Mr Davidson suggested that the public, when making their purchases, might bear in mind the technical standards which has been recommended by the Australian Broadcasting Control Board for adoption by receiver manufacturers. These standards had been formulated in consultation and agreement with representatives of receiver manufacturers at conferences arranged through the Associated Chambers of Manufacturers, for the purpose of ensuring that receivers would be designed to best meet the requirements of the Australian Television Service. Representatives had, however, been made to him by a number of responsible bodies to the effect that some of the receivers now being offered for sale to the public did not comply with the standards recommended to manufacturers, and Mr. Davidson said that he felt it necessary to emphasise that prospective purchasers should, in the first place, make certain that the receivers in which they were interested used intermediate frequencies of 30.5 megacycles per second for the sound carrier and 26 megacycles per second for the vision carrier, which are the frequencies laid down in the Board's standards agreed to by the manufacturers. Unless this standard was adhered to, there was every reason to believe that serious interference to reception would result. Although a somewhat complex technical matter, he was sure that retailers would do all they could to provide purchasers with full information so far as sets being sold by them were concerned.

It was also essential, said Mr. Davidson, that all receivers should be capable of being tuned to all the ten channels which had been allocated for Television Stations in the Commonwealth. This was particularly important because, although only three channels were to be used immediately, additional ones would

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be brought into use later and, at that stage, the public could be involved in some expense in the modification of those sets which did not incorporate facilities for tuning to all the channels.

Mr. Davidson concluded by saying that although the Australian Broadcasting Control Board, as the appropriate instrumentality of the Government, has statutory powers with respect to many matters concerning television, it has no authority to prohibit the sale of receivers which do not comply with the standards which have been promulgated. The Broadcasting and Television Act recently passed by Parliament did, however, provide for the making of regulations with respect to interference and although it was desired to avoid the making of regulations if at all possible, because of the wide implications involved, such a course might ultimately be forced on the Government.

A fortnight later, on Thursday, 2nd August, Mr. Davidson made a further announcement.

The majority of Australian manufacturers of Television Sets have given assurances that sets being made by them fully comply with the technical standards recommended by the Australian Broadcasting Control Board and agreed to by representatives of the manufacturers, the Postmaster-General said.

Mr. Davidson said he had received these assurances following his recent warning that intending purchasers of Television Sets should take every precaution to ensure that receivers in which they were interested met with Control Board standards.

Nevertheless, the Minister said, he was informed that certain receivers were still being sold which employed intermediate frequencies, differing from those recommended by the Board.

The Board's recommended intermediate frequencies were 30.5 megacycles per second for sound carriers and 36 megacycles per second for the vision carrier.

"I want to repeat that receivers employing intermediate frequencies, other than those recommended, could be subject to objectionable and serious interference which could be difficult to eliminate," Mr. Davidson said.

The Minister said that because of the non-standard frequencies being used in some receivers, interference could be caused by the transmission of Amateur Radio Stations operating in their authorised bands. There were some 3,000 of these stations in the Commonwealth.

"Licensees of Amateur Stations were normally obliged to ensure that their transmission did not cause interference to other services, but they could not be held responsible for interference to Television Receivers which did not comply with standards recommended by the Board.

"The Wireless Institute of Australia has already been informed accordingly and an assurance given that no restriction would be placed on the present activities of Amateur Radio Stations in such circumstances," added the Minister.

"I emphasise that intending purchasers of Television Receivers should seek assurances from retailers that the receiver they intend to buy complies with the recommended standards of the Board," Mr. Davidson said.

In furtherance to this, Executive received from the Amateur Administration, a reply setting out the attitude of the Department and herewith is an excerpt of relevant portions.

"As you are, of course, aware, present practice provides that, where Amateur Station transmissions in any authorised band cause interference to medium frequency broadcast reception the Amateur Station licensee concerned is obliged to accept responsibility for clearing the interference and to desist from transmitting until such time as it is cleared to the satisfaction of the complainant.

"It is proposed to apply similar principles generally in regard to interference caused to Television reception.

"Where it is established, however, that the interference experienced by the Television Receiver arises from its employment of intermediate frequency amplifier channels utilising frequencies within bands authorised for use by Amateur Stations the Department will not require Amateur Station licensees to accept responsibility to clear the interference or to restrict their legitimate transmitting activities in any way."

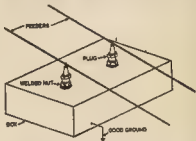
It is therefore apparent from the foregoing that Federal Executive has been most active in taking all possible steps to bring about this very satisfactory solution. It is hoped that members will cease to be perturbed in this regard.

Finally, Executive is confident that Amateurs will be most circumspect in their efforts to avoid interference and should this unfortunately arise, will extend their fullest co-operation.

HINTS AND KINKS

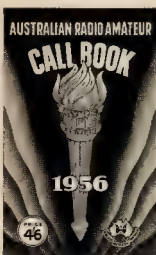
LIGHTNING PROTECTION

A very useful lightning protector can be made simply by taking two 14 mm. car spark plugs and re-cut the thread to 1/2" S.A.E. Now get two nuts to screw on. Take the nuts and weld to a mild steel box which has been welded airtight with only the two holes which the nuts are welded over. Heat this box and whilst warm, screw the plugs into the nuts. This is now an airtight box and moisture will not corrode the points. (This is set to 0.040".)



Secure the unit to a water pipe or suitable ground. Bring the feeders to just connect to each of the plugs and then carry on to the transmitter. You will be surprised at the static, etc., that will leak across the points.

—By ZS4CM, reprinted from "Radio ZS," Sept., 1955.



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VK5WC—THE WOOMERA AMATEUR RADIO CLUB

By R. A. CATMUR,* VK5FY, Hon. Secretary, Woomera Amateur Radio Club

THE call sign VK5WC, of the Woomera Amateur Radio Club, probably brings several thoughts to your mind when you hear it. Maybe the call itself promotes a smile, particularly when you receive our card, or perhaps you think of the QTH—Woomera, a place much talked about in the press from time to time. No doubt many of you are thinking "So what, it's another Amateur Club, what's interesting about that?" But, how many Amateurs have their QTH shown as Woomera? The answer is none, and therein lies a story, the formation of the Club in Woomera.

Wherever you have a township the size of Woomera, there are bound to be a few Amateurs, and since Amateur Radio is their hobby they set about going "on the air." In Woomera their first disappointment is a letter from the P.M.G. Department which states:

"It is regretted that you cannot be authorised to operate from that address."

To the best of our knowledge Geoff Svenson, VK3AHS, was the first Amateur to receive such a letter, way back in 1948, so he applied to the Department of Supply for permission to operate in Woomera. Unfortunately, as so many Amateurs have found, the average man (even in high places) is not aware that the Amateur has Regulations to which he must adhere, but imagines that we get our transmitter going, find a quiet hole in the frequency spectrum and press on regardless. So, not without good reason, the Department concerned replied, stating that if a club was formed, they would again consider the matter.

Going back through the files, we find that such a Club was thought about, but try as he may, VK3AHS just could not seem to find enough Amateurs, or those interested in Amateur Radio to really start something. Despite Geoff's efforts, the whole thing became bogged down and eventually he was posted elsewhere, when of course he was happy to be "airborne" again.

About this time, Don Burkitt, VK3FP, arrived in the area, and he too tried to overcome the problem. Again, the only licensed Amateur in Woomera was himself, and he got nowhere fast—no coin a purse. There were plenty of people interested in general radio, but only a couple really interested in the Amateur aspect. So once again the spark was there but the kindling wood damp. In 1952 VK5FY arrived, and it was not long before VK3FP and VK5FY were in cahoots and started to fan the spark. A meeting was held and the three present, Don Burkitt, the author and Mr. Geo. Eastland, formed themselves into a pro-tem committee. VK3FP President, VK5FY Secretary, and George Eastland Treasurer—with no funds, till it was decided to produce a constitution for the proposed club and if the authorities accepted it, then the club could be formed.

Group Captain A. G. Pither, R.A.A.F., was the Superintendent of Woomera at this period, and he assisted in the club's formation at the higher levels by somewhat smoothing out the path over which our request must travel. In July, 1953, the constitution had been approved by the Department of Supply, and then VK5FY visited the P.M.G. Wireless Branch at Adelaide to discuss the license application.

On 6th August, 1953, the first general meeting of the club was held, and present were the Patron, Grp./Capt. A. G. Pither; the President, VK3FP; Secretary, VK5FY, and Treasurer, Mr. G. Eastland, with two prospective members.

At this meeting the President stated that the Club had an approved constitution, the license was on its way, and a clubroom had been acquired (an old powerhouse approximately 15 x 20 ft.).

agement and support; and to Mr. John Maddern who assisted us in problems peculiar to Woomera. Our thanks also to Captain J. B. Newman, R.A.N., the present Superintendent, for allowing us to publish the history of the Club.

The Club has been affiliated with the Institute since its inception, and the majority of its members are also individual members of the Institute.

The rig at the Club consists of an AT14 Transmitter (purchased from disposals) which has been modified for plate and screen modulation and uses an 813 in the final.

We have three antennae—a rhombic firing into VK6 land, which is one wavelength long on 80 metres (what it is to have wide open spaces). Its efficiency can be guaranteed by the VK6 boys who reside in its major lobe! There is a 40 metre dipole, and a long



Members of the Woomera Amateur Radio Club. Left to right, Mrs. ("Cec") Angrave; Ron Catmur, VK5FY; Ray Farmer, VK5FF; Keith Angrave, VK5ZAS; Bernie Waight, VK5QW; Sid Murray; Mick O'Reilly; John Allan, VK3EI.

This meeting was a milestone in the progress of Amateur Radio at Woomera, and it was agreed that at the next meeting (which would be well publicised) the members would elect their own Committee. The six people present then completed their application forms, paid their subscriptions and the Club was under way.

On 10th August, 1953, the Club License was received and VK5WC went "on the air" with a transmitter and receiver loaned by the Department of Supply.

Since that date when VK3FP and VK5FY added a little more congestion to our bands under VK5WC, the following Amateurs have been members of the Club: VK5OC (Len Baker), VK5JE (Ted Cawthron), VK5FF (Ray Farmer), VK5QW (Bernie Waight), VK5ZAS (Keith Angrave) and VK3ARO (Ray Pulford). VK5FF, VK5QW and VK5ZAS took their examinations at Woomera, also an ex-member, VK5ZAZ (John Gluyes) received his license after he had left the area.

We must acknowledge gratefully the help received from the Department of Supply during the Club's formation, and afterwards by the loan of equipment. Our special thanks to Grp./Capt. A. G. Pither, R.A.A.F., who, as Superintendent during those days, gave us much encour-

wire 132 feet long. The receiver is a B28 (CR100), backed up by members' own receivers from time to time.

The Club took part in the first R.D. Contest to come its way, when VK5OC (Len) knocked up a good score at VK5WC, and no doubt assisted VK5 in winning the Trophy. The rhombic was originally erected for that Contest, and since it was still standing, it helped VK5WC log VK5FF, VK5WC log VK5FY and VK5WC knock up a few points last year VK5 won it again, and we hope to help this year.

The Club's QSL policy is 100% to both Amateurs and Listeners (Listeners please note that a stamped addressed envelope will assist our Treasury no end). Up to date we have some 200 cards on the walls, including a few rare ones, but relax boys, we're a long way from the DX C.C. We have been trying hard to "work all W.I.A. stations" but so far VK5WI is the only one who has sent us a QSL—how about it, W.I.A.?

During its lifetime the Club has been publicised on the A.B.C. when an actual QSO was recorded and broadcast. We have received many personal visits from Amateurs, including Gs and Ws. We now seem to be well established in Woomera, and hope to meet you on the band one day. 'Til then, 73 from the gang at VK5WC.

*P.O. Box 39, Woomera, South Aus.

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YL CORNER

BY PHYL MONCUR

A luncheon engagement with VK5YL and a most enjoyable couple of hours spent in her company. We had not met previously and so had arranged for both to wear W.A. badges, this made recognition a cinch. We chatted on many subjects of mutual interest, but of course radio took predominance. I was most anxious to find out how somebody built small in physique, just a tiny bit shy and very feminine in approach could have tackled such a man's job and I was not disappointed. I'm afraid I bargained her with questions. And now I'd like to introduce her to you.

VK5YL, Mrs. Austine Henry, received her Amateur license 28 years ago last May. She was the first YL to sit for the A.O.C.P. exam in Melbourne and at that time became the third YL in VZ to receive a license and the first to hold the letters "YL" in her call.

But that was not the beginning of it all by a long way. In 1920 radio C.W. was being sold before that when Austine was quite a little girl. She had been sick and had her tonsils out and was convalescing. When a kindly uncle promised to buy her a present and asked her what she would like, she didn't hesitate for a moment, she knew what she wanted most of all—a wireless set. At this time there were no wireless sets in the family; it was just like a kid these days asking for a new toy. Also there was no radio in the family. It was just something that was in her, herself.

She got her wireless, a crystal set it was, and she very great and big. Today it has become a family heirloom, she still wouldn't part with it for anything. She gradually got through it, she pulled it out, she tried to find out how it worked, started reading books on radio, then built other crystal sets and from that time on she was always finding out more and more interesting.

When she was working for her ticket she found old Amateurs were always ready to help. She recalls Chris VK3JR and Max VK3EQ both being wonderfully helpful. Her then husband—Bill, Henry, also helped. He also helped her with her studies in theory and code. Bill, though not an Amateur himself, has a very keen interest in radio and has never ceased being interested in her hobby with her and is just the sort of husband a YL needs. YL's energy, needs. They have one son, Austin, 36, and up until recently he had no interest in radio whatsoever. He just liked fishing, football, cricket and his motor-bike and that things young men seem to enjoy. This was secretly just a little bit disappointing to Austine, but over the last couple of years she has started to get young Austin, too, and he is now doing a course in radio engineering. Austine is delighted.

She holds the certificates DXCC, WAC, WBE and BERTA and just recently was awarded the YL-WAC-YL, the first issued ever in the world, also is awaiting confirmation of the QTC and needs only one more confirmation to be eligible for the silver medal award of the DUF. Pre-war, VK5YL was active on 80, 40 and 20 m.w. and 16 Mc. phone, but post-war has been active mainly on 14 Mc. Her QTH is at Murrumbidgee and is in a fairly good location for DX. The boys, Henry mainly and Bill, her friends she has developed all over the world and particularly in G and W lands. She entertained Evelyn Scott, WENZP, during her stay here last year and hopes some day to visit Evelyn and many of the other friends she has made.

Post war she has worked 183 countries with 148 confirmed. Pre-war work was 11 she was a member of the Royal Australian Air Force Wireless Reserve. She first YL operator (in the Wireless Reserve) and during the war years helped to instruct in Morse code classes at the Wireless Institute of Australia (Victorian Division) while her OM was on active service.

Her other interests include motoring, she loves driving herself and also classical music, particularly the symphonies. She enjoys cooking and according to her OM, is a very excellent cook, but cooking really isn't her favourite past time, but then how very understandable with all that waiting on her. She has a radio which occasionally operates phone, but prefers c.w. for which she has a pretty mighty fist. Listening to all the bands seems to copy her speed at all on the band and sends it back just as fast. But then 28 years of c.w. is one heck of a lot of practice.

YLs and XYLs, you are invited to contribute to this, your column. Next issue, "TV Fever."

S.W.L. SECTION

The weather has been beautiful and I've received correspondence from VK3, 3, 4, 5, 6 and 7. Yes, you can read that again! VK3 to 7 inclusive. "What more could I want?" you may say. Just VK3 (Australian Capital Territory) and VK6 so as to include all VK prefixes in this column. So if you live in any of these territories and just drop me a line telling me all about your activities.

VK3—NEW SOUTH WALES

B. F. Cartwright from VK3 is a young lad, 17 years old. He read of s.w.l.s. in the July issue of "Amateur Radio" and has been making queries about s.w.l. activities. He hasn't yet had much experience in this game beyond building crystal sets, but he says he has given him hours of enjoyment. I'll be answering your queries as soon as possible my friend.

No information has been received from Stan Abbey or Jack Ashley this month, so we hope you two boys are still doing alright.

VK3—VICTORIA

July Group Meeting. This meeting of the Group was the form of a surprise night. Six members of the Group, including a sealed envelope in turn in which was enclosed either a question to be publicly answered or instructions to be carried out. The program from an instruction to David 3ZAQ requiring him to tell us how he achieved his v.h.f. 100, to a question asked of Frank Nollis as to the techniques he used in listening for DX stations. The evening was very instructive and entertaining.

Coming Events: Members of the VK3 Group are asked to keep in mind the following: Sept. meeting—Tuesday, 25th, talk on Radio Astronomy by Ron SARV. Oct. meeting—Tuesday, 30th, talk by Len 3LN. Don't forget any of these meetings, please.

Correspondence: Members of the VK3 Group have been very active in the past few months. Frank Nollis, WIA-L3038, from Traralgon, has honoured us with another letter. He included a list of stations he has recently heard and also some queries. Henry goes to mention the repairs he has been making building an audio amplifier. Hope everything goes well Henry, and let's hear more from you. Another country correspondent, Len Jenkin, WIA-L3038, has found time to put pen to paper. Dave is using a T.L.Z. rig, the line up being as follows: 1N5 V.G. tube, 1000 ohm resistor followed by an audio stage of 4 transistors, namely OCT1, OCT1 and a pair of OCT2 in p.p., the latter being a multiband amplifier. Two 8 ft. lengths, one length horizontal, the other semi-vertical, fed with a three-wire open wire line. This antenna can be altered by switching the connections to have the two sections either in or out of phase. The antenna was described by WAAH in "A.R." May 1955. Let's hear of some plans for more building too. Let's know all about it when it comes out of Dave.

8 w.t. 100 Certificate. The first of this certificate has been won by yours truly and he is very proud of it. This is one well worth trying for and it's not too hard either. To qualify you must be resident in Victoria and produce evidence in the form of confirmations of having heard 100 Amateur Stations. This certificate is free to W.A. members and costs only 1/6 of 1/6 is charged to non-members. Confirmations must have been made since 1/1/54. Cards should be forwarded by post, mail to the Vic. Div. W.A., 191 Queen St., Melb. and return reg. mail postage should be enclosed. So have a go at this one.

APPEAL TO AMATEURS Interference to Slow Morse Transmissions

Some of you apparently may not know that the Vic. Div. W.A. conducts these transmissions on the 80 m.c. freq. about 8 p.m. every Sunday evening from 8.30 p.m. to 9 p.m. A.S.A. interference on these transmissions has been very heavy of late and numerous complaints are being received from s.w.l. operators outside VK3) and also local stations have been heard on the freq. So OM, for our sake when on 80 m.c. listen first before throwing the switch. You may save yourself the embarrassment of having your call listed in these notes.

VK4—QUEENSLAND

VK4 is kept in the news by a letter from Donald Scott Cribb written from Murrumbidgee. Don is trying to arouse some interest among chaps in his area and so we wish him luck in his efforts. He has a rather impressive list of gear including an ARX and a Panoramic RX. However, full details of his equipment are too long to give here.

FREE—SOUTH AUSTRALIA

Mac Hillard on behalf of the VK3 Group provides some information on their activities. The

* Compiled by: Ian J. Hunt, WIA-L3009, 101 Robert Street, Northcote, Vic.

July meeting of the Group was held on the 14th and after some general discussion they were shown over Radio Station BKA by Mr. Bob Weston (SPS please note). Thanks of the VK3 Group go to Mr. Patton and Len Cragen for making the visit possible. Mac also included a list of stations heard. Thanks for your letter.

VK4—WESTERN AUSTRALIA

From Inglewood, I am informed by K. C. Ricknell that there are at least two s.w.l.s. in W.A., himself and Roger Fort. Both boys are using converters fed into ARX RX's and like the VK3 boys looked forward to the R.D. Contest. Hope to hear a lot more of your activities from VK4.

VK1—TASMANIA

My correspondent from Launceston unfortunately only gave his first name which Roger Glad you know by letter anyway. Roger is using a 4-tube home-brew rx and is at present constructing another set. His antenna is a windom half wave on 40 m.c. 38 ft. high.

Well unfortunately as space is limited, I cannot include details of the logs you have all so kindly sent in. I do however feel that the news of activities is very important and should take precedence over reports on the bands.

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M226

FEDERAL, and DIVISIONAL NOTES

FEDERAL

Fed. President: W. T. S. Mitchell, VK3UM.
Fed. Secretary: L. D. Bowie, VK3DU, Box 2511W, G.P.O., Melbourne.
QSL Bureau: J. Jones, VK1RJ, 23 Landale Street, Box Hill, E.11, Vic.
Awards Manager: A. C. Weynton, VK1XU, 3 York Street, Boroach, Vic.

NEW SOUTH WALES

President: Jim Corbin, VK3VZ.
Correspondence Secretary: H. King, VK3ASU, 18 St. Pauls Road, Balgownie, N.W.
Meeting Night: Fourth Friday each month at 8.30 pm, House, Gloucester Street, Sydney.
Divisional Sub-Editor: Stan Bourke, VK3EL, 17 Chichester Ave., Canterbury.
QSL Bureau: B. Corbin, VK3VY, Box 17M, G.P.O., Sydney (Inwards and Outwards).
Zone Correspondence: North Coast and Tablelands: Noel Hanton, VK3AH, Ryan Ave. West Kempsey, Newcastle; Les Sparke, VK3ADR, 18 Kambah Rd., Highfield, via Adamstown; Coalfields and Midlands: J. W. E. Edge, VK3JVL, c/o Comfort Ave., Cessnock Western W. Butt, VK3IWH, "Camblough," Forbes South Coast & Southern: E. Fisher, VK3DZ, 3 Galade St., Warrawong; Western: J. W. S. Edge, VK3AJQ, Wallace St., Coolman, Tamworth F. W. Fowler, 4 Thompson Crescent, Tamworth.

VICTORIA

President: G. Dennis, VK3FT.
Secretary: F. G. Ball, VK3VY.
Administrative Secretary: Mrs. May, C.O.R. House, 181 Queen St., Melbourne.
Meeting Night: First Wednesday of each month at the Radio School, Royal Melbourne Technical College.

FEDERAL

EXOTIC I CONFERENCE

The Second Triennial Conference of I.A.R.U. members in Region I, was held in Stresa, Italy, 15-18 June 1958, under the sponsorship of the Associazione Radiotelevisiva Italiana. About forty official delegates from fourteen countries were present, and three other societies were represented: the "Young Men's Radio Club" (I.A.R.U.) and WILVQ of A.R.R.L. were present as observers.

H. Hammann, G2IG, President of the Radio Society of Great Britain, was elected Chairman of the Conference, after welcoming speeches by Big Roberto Sestini, President of the host society and President of Honor of the Conference, the Mayor of Stresa; the head of the Tourist Office; and Capt. Per-Anders Kinnman, SM2ZD, President of Swedish Søndary Amateur and Chairman of the Region I Executive Committee.

The first session was devoted initially to the organization of the Conference and to receiving the reports of the officers and of the Executive Committee. Jean Lapa, HB9J, was elected Chairman of the Administrative Committee, and H. A. M. Clark, G8OT, Chairman of the Technical Committee. After discussion, it was decided that it would be necessary to send a delegation to the C.C.I.R. meeting at Warsaw in August. A number of recommendations by the Big Roberto Sestini Committee on the business matters of the Region I Division were acted upon.

It was voted unanimously to send delegates to the 1959 I.T.U. Convention. A considerable fund has already been set up to cover the expenses of I.A.R.U. representatives from Region I, and additional contributions to the fund were voted later to the meeting. The Executive Committee was authorized to appoint delegates when the time comes.

The Executive Committee presented a draft of Rules for the Region I Division of the International Amateur Radio Union. After discussion, the Rules were adopted with a few minor amendments.

The next two days were devoted to meetings of the various working committees. The Committee of which forwarded recommendations to be acted upon at the final session. On Friday, the delegates enjoyed sightseeing, a banquet and a ball arranged by the host society. The final session was held on Saturday. In connection with the problem of non-Amateur stations, the Rules were adopted which adopted a standard form for reporting such stations. It was decided to limit reporting at first to broadcast stations and to limit reporting to commercial stations, with a wider range of monitoring to follow after the societies and their members have gained experience. The Con-

Divisional Sub-Editor: Phyl Moncur, 230 Union Road, Ascot Vale.
QSL Bureau: Inwards and Outwards—W.I.A., 191 Queen St., Melbourne, C.1, Vic.

Zone Correspondence: Central Western: W. J. Kinsella, VK3AKW, Magdala, Luback; South Western: W. Wines, 48 Cranley St., Warrnambool; W. Zimmer, VK3AWZ, 70 Skene St., Newtown, North Eastern: L. Ellison, VK3ALE, 73 Orr St., Shepparton, Far North Western: M. Poller, VK3VZ, 101 Lennon Ave., Mildura; Eastern: J. Sparke, VK3AJK, 20 Marshall Ave., Moe, North Western: C. Case, VK3ACE, Cumming Ave., Birchlip.

QUEENSLAND

President: Frank Bond, VK4EM.
Secretary: W. J. Rafter, VK4PR, Box 638J, G.P.O., Brisbane.
Meeting Night: Fourth Friday in each month at the State Service Union Rooms, Elizabeth Street, Brisbane.
Divisional Sub-Editors: F. B. Bond, VK4EM, and W. J. Rafter, VK4PR.
QSL Bureau: Inwards—F. R. Filer, VK4JF, 318 St. Burdett, Outwards—Miss Clair O'Brien, 33 Jardine St., Stafford.

Zone Correspondence: Maryborough: R. J. Glasco, VK4BG, 80 North St., Maryborough; Townsville: R. Wilson, VK4KW, Hogan St., Stuart, Townsville.

SOUTH AUSTRALIA

President: W. J. Bulling, VK3CK.
Secretary: B. W. Austin, VK3CA, Box 128K, G.P.O., Adelaide. Telephone: UX 3021.
Meeting Night: Second Tuesday of each month at 17 Warmouth St., Adelaide.

ference urged occupancy of all the Amateur bands by all Amateurs to discourage "squatters' rights" use of the bands by non-Amateurs, but they disapproved of tactics involving deliberate interference to legitimate stations sharing the 40 metre band.

The delegates commended the growth of telephony in licensing, especially among European nations, and expressed the hope that work in this direction would continue. The Administrative Committee had discussed the possibility of introducing a licensing system requiring permission to use the 50-54 Mc band during the present part of the sunspot cycle, but the chances appeared most remote since TV is operating there in Region I. The French and Russian Amateurs already having a segment at 73-75 Mc. It was agreed that other Region I members seek permission in that segment. An extensive paper submitted by the Savex Radiomasters Jugoslavije, concerning ways of increasing comradeship and good will among Amateurs, is to be studied and greater action.

The assembly also urged that more emergency networks be set up. This action followed reports by several societies to the Administrative Committee on the systems in use in their countries. The European Band Plan was hailed as a Realistic and International co-operation, and the only change voted was to move the limit for exclusive c.w. operation in the 30 metre band from 14125 Kc. to 14100 Kc.

European Band Plan

3600-3800 Kc.—Telephony only.
3800-3900 Kc.—Telephony only.
3900-4000 Kc.—Telephony only.
4000-7150 Kc.—Telephony only.
7050-7150 Kc.—Telephony only.
14000-14100 Kc.—Telephony only.
14100-14350 Kc.—Telephony and Telephony.
21000-21150 Kc.—Telephony only.
21150-21300 Kc.—Telephony and Telephony.
28200-28500 Kc.—Telephony only.
28500-29700 Kc.—Telephony and Telephony.

The Conference encouraged the growth of a.s.h. after reports on progress to date were heard at the Technical Committee sessions. It

Divisional Sub-Editor: E. C. Daw, VK3EF, P.O. Box 44, Gawler, S.A.
QSL Bureau: Geo Lardon, VK3RX, 23 Belair Rd., West Mitcham, S.A. (Inwards and Outwards).

WESTERN AUSTRALIA

President: P. A. T. Tredres, VK3FT.
Secretary: J. Mead, VK3JL, Box N102, G.P.O., Perth, W.A.
Meeting Place: Perth Technical College Annex, 1000 Hay St., Perth.
Meeting Night: Third Tuesday of the month.
Divisional Sub-Editor: E. J. A. Cowles, VK3EF, P.O. Box 11, Bencubbin, W.A.
QSL Bureau: B. Humber, VK3RU, Box 715, G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: F. J. Evans, VK3FJ.
Secretary: M. Hurburgh, VK3MH, Box 371B, G.P.O., Hobart.
Meeting Night: First Wednesday of each month at the W.I.A. Club Room, 147 Liverpool St., Hobart.
Divisional Sub-Editor: H. J. Bracken, VK3EB, C/o P.O. Bronte Park.
QSL Bureau: K. A. Johnson, VK3TK, 34 Tower Rd., New Norfolk.
Zone Correspondence: Northern: K. J. Briggs, VK3TLX, 15 Melbourne St., Launceston, Perth: W. Lattison, VK3UW, 34 Mark St., Burnie, Tas.

PAPUA-NEW GUINEA

President: F. M. Nolan, VK3FN.
Secretary: F. Lloyd, VK3QD, C/o. O.T.C., P.O. Box 86, Port Moresby.
Divisional Sub-Editor: To be appointed.
QSL Bureau: F. Lloyd, VK3AL, C/o Commonwealth Dept. Works, Port Moresby.

was further recommended that more use be made of translators, especially in emergency gear. To foster exchange of technical information, and thus speed up technical progress, it was suggested that each editor of a society magazine will send English abstracts of the articles in every issue to the other societies in the region.

The I.A.R.U. Secretary was invited to speak on the problems of Amateur representation at International Telecommunications Conferences. Pointing out that only governments have voting rights at these gatherings and that the main business of the I.A.R.U. is to represent the amateur groups, he pointed out that the plan formulated long before the actual conference by each government, the Secretary urged that Amateur groups try to bring their administrative a couple of years in advance so that the government's recommendations in each case will be as favorable as possible toward Amateurs.

A budget of 1300 pounds sterling per annum was adopted, with each society contributing an amount in proportion to its membership. A permanent youth committee was set up, with DL3FJ as chairman and ON8BK as secretary; membership is open to any of the societies.

The gentlemen listed below were elected to represent the Region I Council for three years: H. Laeth, HB9GA, Chairman; Arthur Milne, G8MI, Secretary; Jacques Simonnet, FD3W, Treasurer; Odrick Lohra, DL3VJ; Massimo Giovannetti, IZ3AR, and Per-Anders Kinnman, SM2ZD; and Janus Jenzens, YU1AA.

The delegates commended the Associazione Radiotelevisiva Italiana on its excellent preparations for the Conference. The simultaneous translations of all the speeches were made in English and French, clerical arrangements were well planned, and the personal arrangements for the delegates were excellent.

The next Conference of the Region I Division will be held in 1959, at a place to be decided. The Deutscher Amateur Radio Club is considering sponsoring the Conference.

Those present were: SM2ZD, G8MI, G8CL, PA0DD, G2IG, and HB9GA, Executive Committee members 1953-56; DL1WA, DL1VJ, DL1FM and DL1BJ, of D.A.R.C.; G8OT and G8WB, of R.S.G.B.; DL3FJ, of I.A.R.U.; G8BK and ON4QZ, of U.R.A.; G2ZNU, of E.D.R.; ZA1CA and ZA2CQ, of U.R.E.; OH1TK, of S.R.A.L.; FD3W and FD3VJ, of U.R.A.; PA0FJ, of V.R.E.; O.N.; 11FV, 11BDV, 11BYV, 11ABV, and 11BEV, of A.L.I.; CN8DM, of A.A.R.M.; SM8DN and SM8AR, of S.R.A.; 11BYV, 11BEV, and 11BFV, of U.S.K.A.; YU1A, YU1AA, and YU2CF, of S.R.J.; the Secretary I.A.R.U. and WILVQ, of A.R.R.L.; and HB9ST, of United Nations.

SILENT KEY

It is with deep regret that we record the passing of—

VK3EO—Ron Russell, July 29.

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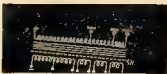
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RAY JONES, VESSEL MANAGER

contacted before last June, June, Sydney and Melbourne
 Brisbane, Adelaide, Sydney and Melbourne
 were invited to meet an old friend
 in Henry (Pat) Miller. WLAIS, KAARA, and
 ZCRPA, whilst his ship "Pioneer Cove" was
 in the Conventioned port. Pat, who is an
 understanding and very friendly man, spent
 most of his stay in each port. Whilst in Melbourne
 Pat was desirous of making a recording for
 the A.R.R.L. Voice of America shortwave
 broadcast, and the club was pleased to have
 Australian Amateurs, particularly Max Howden,
 VK3BQ, lend VK3PG generously offered
 the use of his recorder so a miniature hamfest
 was held at the club on the 10th of June, and
 the recording duly made. Eric VK1EM
 brought along his projector and permitted the
 gathering to view scores of excellent hoda-
 ments. The recording was made by VK3BQ,
 VK3PG, VK3SAKH, VK3BQ, VK3EM, WLAIS

Many stations have been heard making last-minute preparations for the very popular Remembrance Day Contest. Looks like all the "big guns" will be in there hoping to do better this time. Hope you did well, OM, and that you weren't TQO'd on Monday morning!

Again, with much news of the doings of the stars, let's turn our eyes back to some trouble with that "spy ring." Barry AARF, Jack ZATW and John IFG have been recently heard with good signals from mobile? Mc. sec. Don JASW off on business trip to G land via the land of the Kilwisits both ways, nice busload of people, no more dramatic tests with "one-eyed monster" masquerade by the speaker! Regular members' mostly due to com-

Lionel 2CS can be heard with the other greybeards on 80 mx each Sunday night. John 2XQ also frequents the "old man's band" on phone and c.w. Charlie 2ARV worked some daylight DX on 80 mx w/his ex-his ballroom

Registration \$21 each Adult.

Bruce ZAD, after going to a lot of trouble to put up a 4 el. beam on 2 mx, forgot to anchor the feeders, yes, they broke. Never mind, Bruce, we will bring you down a horse's chair. It is a fact that ZABT did arrive home safely after being down Eden way, he did not get lost in the mud on the Hume Highway, nor did he get too enamored with the

so on. My KYL thought them to be a satisfactory addition to the already untidy heap—what am I saying. Les SAAX was not present to see the above glory for he had his nose out of joint—no, not because of the said GW. P.O. M.I. II, but because of a swift and graceful organ by a spinner that a machine hurried at him. Bad luck Les, hope the snorkel will prove to be central and functioning normally.

Concours d'art, concluded the evening, led by those cheerful and hard-working fellows, Douglas and Norm. There was not a great deal of gear offering, but it was good.

By the time you read this the VK-ZL Certificate should be out and about—congrats to those lucky ones, the Committee spent many long hours checking and regretting the delay in issue, but consider accuracy essential.

Our T.V.I. Committee still keeping us advised of actual and prospective t.v. purchases, all keeping right up-to-date themselves, so when the problems face us we will have a "knowledge pool" to draw on. They are asking us to advise prospective t.v. purchasers to watch they don't buy or commit themselves for equipment that deviates from the laid down Airtel standard of frequencies, etc. particularly in view of the announcement by P.M.G. that they could not be expected to protect non-standard receivers from i.f. It will be a pity if a few of our members will be blamed for plenty without having a set near us with an i.f. on a possible Amateur band or harmonic thereof.

Keep clear of 7148 Kc. on Sunday mornings from 0930 to 1130 C.S.T. at least to avoid clashing with other Distant's sessions. Gordon was giving this out last week. Just as the rain came on the same frequency and really did some damage. It was probably accidental—but then we can sometimes avoid such accidents by knowing beforehand.

Why does our Public Relations Officer, Norm, always arrive at morning tea time? He never loses to me as though he uses such things, but that's another matter. Bruce GRIFF, doing a fine job on the Morse Classes—the Council made an appreciation—very nice Bruce, your help is very much appreciated. Norm, returning home saw a dirty big 80R screeched on my beautifully rolled, leveled, graded driveway. What? Always plenty of cars, but not one all the same. Austin SWO was steamed up for the R.D. in spite of a possible "away" job on that day. Good luck fellow. The following day, 10/10, Gordon & ECU-SWO had a busy time checking logs again (will have to get Les to knock up an electronic brain for the time being). Papers, papers, papers, papers surely. Wal EDF has his 888s well oiled up lately, very steady good signal and his presentation contact with John. John usually gives an indication of possible conditions for the rest of the morning. You would not believe it, but John ECK actually asked Wal for the correct time to hand him a beer. He was the bloke who saw to it that his show kept "our" clocks right, bad show John.

NORTH WESTER ZONE

Congrats to Dave Barker on passing his "Lited" which should help raise interest in 2 m work. Dave's antenna is a real beauty. It hurt up there Dave, give the place some character. Bernie SQW has finished a small rig, much to his surprise, and of others, it works! How can you only one there with low power rigs ready for portable use, the birds tell me Ron DFY has one that he tried out on the 10 m band. It was a real beauty. The fact that P. & S. modulation would complete it, he puts in a good signal here at Gawler. The reason why the amp tube condition is used in this is that he cannot find room for even a sub-miniature transformer, in fact the room in the case is so limited that there is no room to screw the speaker to the panel, no room for the screws that is, he relies on the magnet of the speaker itself to hold it in place!

Some time ago a writer in "QST" told us how to use a speaker; well, we have used it, but not to be out-done the SWC boys have started on just that, but in their case, being of a different pattern, for they are using baked bean tins. They have a queer way of doing it and hope by vigorous consuming of more and more beans to finish up with quarter wave on 40. Life begins at 40, remember?

Haven't heard KILB EZAS' voice lately and understand he hasn't been slamming the club door much of late. Home-building or swatting a few 100's of M.C. IARC home, but not to greener pastures and will no doubt pop up under his own call sign soon; that will make the others green with envy. Ron DFY is off to the 10 m band occasionally, being between the rat race on 40 and the quietness of v.h.f. They tell me it's that quiet on 3 u there that you could hear a beam drop! Sid,

the QSL Manager, makes the best brew known (what of Ron), and is sweating hard, give it a go Sid and be in the swim.

SOUTH EAST

Sorry your notes were late last month, so missed the issue, but on the theory better late than never, we include now. The second anniversary of their monthly meetings was celebrated in the case of the South East. Col SCJ, with Tom STW providing the wind to extinguish same. A good old natter preceded the dinner. John was giving a few, or a least some of it. John is forsaking the bands for motor cycle racing. Keep the front wheel on the band John. A demonstration by associate members of the progress of the recorder impressed all with its efficiency.

Stuart SMS not heard on the air much these days, understand he has having trouble with his beam. If you want a hand at building a shack see Col SCJ, for his infrequent appearances on the air are due to building activities, a smart job, too, from all accounts. Heard that Les SZAG acquired EFW's power supply, right, now match it Les with z.f. gear, and let's hear you. The EFW is a step down transformer with John's modulation gear his possession—looks like Col may get some QRM when this new "gallop" gets going. Erg GSW has reduced possible wind damage to a minimum by re-building to a 3 element job, hope it's "up and doing" by now, 20 is fairly active these times, so don't miss out.

WESTERN AUSTRALIA

At the July meeting of the Division, GRIFF deputising for GIMK, who has gone on a brief visit to G land, gave an excellent description of the Collins 7144 rx. It was evident to members that the emphasis on the design had been placed on selectivity and the means employed to obtain it. Not only is the bandwidth cut to narrow limits, but the response is so flat, interfering v.s. signals differing by as little as 1 Kc. can be completely wiped out. The frequency stability equals that of the well known BC311, and is in fact better. The design, as the demonstration amply convinced members as to the claims made for the receiver.

George 60M has been made a Life Member of the VKS Division, an honour which has been well earned, after 38 years' service, during which time he has served in practically every capacity. George is the second Life Member of the Division, the other being Les SAAG, who this year celebrates 50 years in Radio.

Others of the old gang are Jack 6AV, active once again from a new QTH (with power laid in), and Clarrie SCF. Both have been heard quite often lately. Quite like old times to hear the well known voices again.

Two rare visitors to the last Divisional meeting were Jim 20 and John 20, who threatened to come back again as soon as a new workshop allows him to return the shack to normal operation, and EPL, a very active member, particularly on 20 and 10 m. Carrying on the tradition is Tom 6TH who, after only being on the air for less than six months with his A.O.C.P., has already explored 20, 10 and 5 m. He is also doing a bit of barking on 10 and intends doing a full-time job in the R.D. Contest. Congrats, Tom!

The Constitutional amendment is now law, and limited to 200 members, with no grade members, with stated voting restrictions.

To collect information on commercial QRM in Amateur bands, a monitoring group has been formed, consisting of a number of members, to log any QRM heard on exclusive Amateur bands and send to one of the group, giving date, time, frequency and any other particulars known.

The 40 m Scramble is fixed for Sunday, 23rd September. Rules same as last year, providing for contacts for one hour before lunch and one hour after. Conditions should be better this year. Don't miss this.

Advice has been received that an Amateur in Western Germany has been granted a t.v. license on condition that only pictures or photographs may be televised. It seems that his log will consist of a photo album—GSL.

TASMANIA

News this month as in previous months non-existing—no mail, telephone or telegraph services in this State taking the amount of correspondence received. It is to be hoped we have made it possible to eavesdrop on any extent on the bands.

Recent months have seen a good roll up at times on the Sunday morning hook-up and on other occasions the ether has been a complete void at this QTH. Yours truly and Reg TWIN recently visited the Headquarters for a monthly

meeting to find an excellent roll up and spent an enjoyable night, even allowing for an auction sale where certain gentlemen did not allow for our country simplicity. Visited Leon 17Z and found four in newly acquired vehicle and found him all fired up preparing for Contest. All-band v.f.o., link coupled final, pi coupler, but where is the show man Jim YEAH visiting last meeting, but as yet no report.

The Highlands club should be launched by the next appearance of notes, some fifteen to twenty enthusiasts are lined up, from which we hope some new call signs will emerge.

All chaps forwarding Handbooks, etc., are gratefully thanked for their interest and we hope that their contribution will be of good use in the future.

The lack of notes in last two months are attributed to the gradual loss of contact with members allied with unexpected leave and family sickness at this QTH. Contest time will again have passed when this appears in print so we hope next notes can record a VKJ victory. Well, chaps, unlike the well known axiom, "No news is bad news," as far as this Division is concerned. A little ink and a little time is most inexpensive.

HAMADS

1/- per line, minimum 3/-.

Advertisements under this heading will only be accepted from Institute Members who desire to advertise in the Institute which is their social property. Copy must be received by 8th of the month, and remittance must accompany advertisement. Calculation of cost is based on an average of 10 words a line. Dealers advertisements not accepted in this column.

FOR SALE: Complete Type 3 Mk. II. Tx-Rx with plate mod. consisting pair 6L6s, Class AB1 and power supply for 600, also auto-select and 5" permanent. Speakers 45 or best offer to Perm. Jon Corps, 36 Caulfield Ave., Cumberland Park, Sub. Aus. This gear is the property of the late Ken Thiel.

FOR SALE: Modified SCR522, £15. AR8 Re; needs attention, £10. JW 1880. 2 Havilah Ave., Wahroonga, N.S.W.

FOR SALE: Xtals, many freqs., mostly FT243 holders. All £1 ea. Write for list. T. R. Naughton, Box 80, Birchlip, Vic.

SELL: Following gear in new and excellent condition. Vari-pitch prop. motor for beam. 522 Tx-Rx, mod. complete, for rack or cab. mounting, has 4 channel xtal switching and auto tuning, meters, with or w/out a.c. power sup., has spare tubes, 2 xtals for 144 Mc. and instruct. book. Commercial, cad. plated, 3 i.f. dipole, auto. Coams 60-22 Mc. (add. 1000 spare elements) MN28C Mod. supply, b.c. Re; with p.p. 6V6 output, less p. supply. BC457 mod. to 80 mhz, with tubes. Auto-bug c.w. key, Ferguson OP25 output transf. Modified jewellers lathe, 4" Jacob chuck, v/speed motor. AT20 exciter, cond. fair, no tubes. Inspection, reasonable offers considered. H. G. Woblers, 107 Templeton St., Wangaratta. Phone 422. Would consider swap all above for good tape recorder.

SELL: Marconi Xtal Calib., 10, 100, 1000 Kc., complete with tubes, v.g. order, £4 or offer. New 2226 valve Transformers. 7 Mc. xtals. "QST" and "CQ" mags, etc. Offers wanted. A. R. McRitchie, Box 107, Whyalla, S.A.

WANTED: Old "AR's." wartime and pre-war. Please contact F. Ball, 60 Shannon St., E.12, Vic (WX 2213).

WANTED: One copy each of Vols. 6, 7, 8, 9 Australian Official Radio Service Manual. Good price given. State price to E. K. Morehead, Ropes Creek Rd., Mt. Druitt, N.S.W.

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